

SEQUENCE LISTING

<110> Smith, Hilde E

<120> ENVIRONMENTALLY REGULATED GENES OF STREPTOCOCCUS SUIS

<130> 2183-6055

<140> To be assigned

<141> 2003-08-01

<150> PCT/NL02/00073

<151> 2002-01-31

<150> EP 01200419.8

<151> 2001-02-02

<160> 47

<170> PatentIn version 3.2

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gtctttgtaa caactcactc agaattnatg ccagtaacat atcgttatca ggtttctgct      240
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 gcgccagtga taaccccagc aaacgcgctt tatcgngttg ttttggcggc agtttgtcag 240
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 gctatactag aaacggttatt aagtcccgaa aaggtagttt atagactagt taatatttgc 180
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 tggntangtt agaaaattgg ttaaacacca aacaaggcca ggtgtttcat tacaagatgg 180
 aaaagattga gtatgcccta gaactgctag ggaatcccca gttngcagtt ccggtcattc 240
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gtcatccaaa taaggaaatt gttttatttt ggactaaagt tacgtgtaaa aagngcatatc 180
aaaaccaaca ccttntgttg naattttttg ataagggtgtt acaatgatag agcataaaca 240
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 gaaatatgtc aaagattaag attgttacgg attcaagtac gactatcgaa cccagtttgg 240
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 <223> n is a, c, g, or t

<220>
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 <222> (329)..(329)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (341)..(341)
 <223> n is a, c, g, or t

<400> 19
 aggntgctan gaaaaaattg gctcacaaat catttctttt anttgacgat tgcctttctt 60
 tngatttngg tgatttactt tagtggaata gataaacgtt ggattatttt ggcaagtttt 120
 cttnacttca ttccatcgca gattttatac cgtcgtcgcc taagagagcg actccaagaa 180
 gaccagccca agnaggcngg ttttttgatg tgtaaattgg actacaattc tttattaact 240
 gtgctataat agtttttgca gaaaagtaaa gacggnggct ctaatttctg aaaggtaggt 300
 ggtgtctatg ggcaaatcat cnaaatctna cagaaaggag n 341

<210> 20
 <211> 264
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> iri 32

<220>
 <221> misc_feature
 <222> (15)..(15)
 <223> n is a, c, g, or t

<220>
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 <222> (57)..(57)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (59)..(59)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (78)..(78)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (86)..(86)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (205)..(205)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (221)..(221)

<223> n is a, c, g, or t

<400> 20

gaatcgaatt ggagntcgcc cctcaaacgg ctggcatatc ttttcaatcc ttatctntna 60

gtcgcgaagcg acaagganta gggatnatat aatctcctga gaatactgga ctcaactgagt 120

ctggtatttt cattttatgc tataatgggt tcatgacaaa tcgaatttta gatatggaac 180

aaatgcagga cgaggaatat gtcgngcgta ccctgcgtcc ncagaaatta aacgaataca 240

tcggtcagga caaggttaag gacc 264

<210> 21

<211> 338

<212> DNA

<213> Streptococcus suis

<220>

<223> iri 34

<220>

<221> misc_feature

<222> (16)..(16)

<223> n is a, c, g, or t

<220>
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 <222> (26)..(26)
 <223> n is a, c, g, or t

<220>
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 <222> (112)..(112)
 <223> n is a, c, g, or t

<220>
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 <222> (137)..(137)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (186)..(186)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (205)..(205)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (304)..(304)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (307)..(307)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (332)..(332)
 <223> n is a, c, g, or t

<400> 21
 acagtagcct atgaantctt ggaagnaagc ggaagaagc aaaccattag tttagaccaa 60
 atttttagttc ccataggagg aggtggtctg gttgcaggcg tttaggccta tntgaaagaa 120
 catgcacctg aaattangat tgttggtggt gaagcaagtg gggcacggtc aatgaaagcg 180
 gctttngata aaggtcgtcc ggttnaatta gaccaaattg ataaatttgc tgacggtatt 240
 gcggtacaga aagtcggtaa gtcgacctac gaagtggctc ggaaatacgt agatcgctcg 300

attngtntgg atgaaggggtg gatttccggg antatttt

338

<210> 22
<211> 351
<212> DNA
<213> Streptococcus suis

<220>
<223> iri 4

<220>
<221> misc_feature
<222> (27)..(27)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (64)..(64)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (68)..(68)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (73)..(73)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (90)..(90)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (100)..(100)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (132)..(132)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (146)..(146)
<223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (230)..(230)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (242)..(242)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (251)..(251)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (308)..(308)
 <223> n is a, c, g, or t

<400> 22
 aaaatggcag gggggaccca agggaantct tttctgatat caagggacaa cctggtcagt 60
 cagntggntc aantacaagc cttaccactn gaacaaatan tcgaaaaccg ttatcaacgc 120
 tttagaaaat antaggaaga cctagnattt ttttgataga tttgatacaa tggataaaat 180
 aatttcagga ggttttccat gttagtaaaa gcagatctat caaacgcagn agaattgcta 240
 cntattcagc nccgagcatt tgcggcttta tataaaacct atcaggacca gtacaaccct 300
 gccattgnaa ctatggacta tttccaatca cgctttgcac gaccaaattg t 351

<210> 23
 <211> 362
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> iri 7

<220>
 <221> misc_feature
 <222> (83)..(83)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (87)..(87)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (176)..(176)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (229)..(229)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (252)..(252)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (273)..(273)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (294)..(294)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (333)..(333)

<223> n is a, c, g, or t

<400> 23

gaaattgatg ggcattcttg gtattaatag gaactccatg gctcaatctt cttcgggttta 60

ttggtaatag tagttaccgt cangaanaaa tcgcaaagta taaaaagtgc tgtgaagaga 120

aaaaaagaaa ataagaatct ttctaaacaa gataagagcc gtcaggctct tttttngata 180

taatatagtg gatatgggta attaaaattg tcagaaaaga ctattttana gattaacact 240

ctctgaaaat cntcattaac aagaaaagag gcnggggtca agccccgcat cacntctcaa 300

agtttagcgtc aacatctcag cgcagtagtg gtngattggg tttaacagtc cagtggagtg 360

tc 362

<210> 24

<211> 362

<212> DNA

<213> Streptococcus suis

<220>

<223> iri 8, 26

<220>

<221> misc_feature

<222> (15)..(15)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (61)..(61)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (90)..(90)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (179)..(179)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (181)..(181)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (268)..(268)

<223> n is a, c, g, or t

<220>

<221> misc_feature

<222> (356)..(356)

<223> n is a, c, g, or t

<400> 24

ttcggaatcc ttctntctcc attggaacag ggatacaaag ggacgttaag gaaatccgta 60

ngaaaatagg aaattgacgc agtgtgctan acacacaggg aagtttatct ttttccacta 120

ggattttagt ccgtgttcaa ctaagatacg agatatgttc tggtttacca gaaatttcng 180

nagaaaatta ggagactgac gctgagtggt aacactcaag gaaggctatc tatttttcta 240

agaaattaat ctcgagttca atttcttntg attagtaa ataatgaattg tatctatattt 300

ttgggggtatc gccaaagcggg aaggcaaggg actttgactc cctcatgccc cggttngcat 360

cc 362

<210> 25

<211> 405

<212> DNA

<213> Streptococcus suis

<220>

<223> ivs 1

<400> 25

aatgatgttt gataaacacg ccaatctcaa atacaaatth ggtaatcgte atttctgggc 60

agagggatat tatgtaagta cggttggact aaatgaagcc acaattaaga aatatataca 120

agaacaggaa aaacatgata tagcacttga taagttgagt gtaaaagagt atgaagatcc 180

ctttagggat aatggcaagt agtacgaatg cctctttaag aggctagtga cgagtcaaaa 240

gcagtgaggc ttgaacaaag tgaaagccag cgtctttagg cgctggctgg tgatgtgggc 300

ttatagccct tgttcaaacc acccgtttga cgggtgggtca tgattttttt tgaatatttt 360

tcactatttt gttttacaaa ctagccacct tgtgttagac tatag 405

<210> 26

<211> 410

<212> DNA

<213> Streptococcus suis

<220>

<223> ivs 11

<400> 26

taccaccata tcaccaatat cacgcgcccc gatgcgcccc tcgaagtggg ggatgtggct 60

ggttcccttt gtgaaaacaa cgacaagttt gcgggtcaatc gtgaattacc acgggtagaa 120

gtaggagaca ctttgggtcat tcatgacagt ggggcccacg gcttctccat gggctacaac 180

tacaacgggc gtctgcgttc ttctgaaatc cttttgcagg aagatggcac agcgcggatg 240

attcgtcgtg ctgaaacacc agaagactat ttgcgaacta ttacgggttt tgattttgac 300

aggtaagtct tggaaaagac tagggaatth ggtataatag ggttattgaa agattgttaa 360

aaacaatcag aagtatactt tttagaagag tcaggagatt gacagatgaa 410

<210> 27
 <211> 412
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 15

<400> 27
 gggctatggt ataattaaaa gacatgtata gtcagaatga aaatgaattg attgccattg 60
 gtgagagaat tggaaaggcc tgtaagccaa atcaagttct agtattatca ggggatttgg 120
 gtgctgggaa aacaactctg accaagggtt tggccaagggtt gttaaaaatt gaacagatga 180
 ttaagagtcc tacttatacg attgttcgag agtatgagggt ggccatgccg ctctatcact 240
 tagatgttta tcgaattgga gatgaccctg actcgattga tttggatgat tttctctatg 300
 gaggaggtct aacggttatc gagtggggag aattactgga tgtcagtcta tttgatgact 360
 atttgctcat tcgtatagag aaagagggtg atgggtcgacg attgacagtc ga 412

<210> 28
 <211> 449
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 16

<400> 28
 gaaaattggt gttgttttgg aacactagta gaccagaggc ttctagtaag gtagttgtgc 60
 tcactgagga gggggaagga tgatggaagt tgagaaaagg agtaaggatt atgctcgtat 120
 gtttgaccag caagtcggtc tttatgaaga ctatgctcgt ggacatggac tcaatgcaaa 180
 atgtttatcc attctcatgt ggatttatta taatcccga ggtgtgacgc aaaactgggt 240
 cagtaagaag acctattcaa gcaaacaagt tgtcaatgct actgtaaaga aatttttgga 300
 tggaggcctg gtagttctag aggagaatcc agcagataag cgacataaga aaattaaatt 360
 gacagaggag gggcaacaat ttgctagtcg cattttggat cccttagagg aggcggaaaa 420
 taaggcgctg tctcaactca gtcaggagg 449

<210> 29
 <211> 410
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 18

<400> 29
 gcgttttgga acaagtagct taagagaaac ctagagaaat ctagggtttt tgcttttata 60
 tatctttaca ttgtttaaag aaaatagcat ttcaaaaact ttttgaaaaa aatgtgatat 120
 tctgagcata ttttttgaaa tcggtaacat ttatattgta taatatagtt cgtaaaaaaa 180
 tatattttcg aaagtgagat ttacattat ggctaaaatc gttgttgtcg gtgctaacca 240
 tgctgggtact gccgcaatca aaactatggt gacaaattat ggtcaagaaa atgaaatcgt 300
 tgtatttgac caaaactcac atatttcatt cttgggttgt ggtatggctt tgtggatcgg 360
 tgagcaaatt ggcggtcctg aaggactctt ctactcaaac aaagaagagt 410

<210> 30
 <211> 437
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 19

<220>
 <221> misc_feature
 <222> (40)..(40)
 <223> n is a, c, g, or t

<220>
 <221> misc_feature
 <222> (127)..(127)
 <223> n is a, c, g, or t

<400> 30
 tcgttccatt tgctggtgaa atgccagca atacgcttcn tagcaataga agaaccaaat 60
 agatggcact caatttcatt aggaagaaca gaagagtaaa aagcctgtct aaccacccta 120
 acatagnata ttctctcttt ttcatctatt ttatcaaaaa atcgggtgctt ttctaccatt 180
 tgtcaagttc atcaaggtat ttgacgaaaa atattttgtg tctcgatcatc caaataagga 240

| | |
|---|-----|
| aattgtttta ttttggacta aagttacgtg taaaaagtgc atacaaaacc aacaccttat | 300 |
| gttgaaatth tttgataagg tgttacaatg atagagcata aacagtttta ccgattttgg | 360 |
| gttgaagcgt aatcgtaaaa tttgttatgc ataatgaggt aatacattgt ccgaatgaga | 420 |
| cgatgtatgg aggcaat | 437 |

<210> 31
 <211> 417
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 2, 4, 28

<220>
 <221> misc_feature
 <222> (58)..(58)
 <223> n is a, c, g, or t

| | |
|---|-----|
| <400> 31 | |
| aagacggcgt caaggatgac aatcttgtgg tgacgaccac ccagaaactg gcgtagcntt | 60 |
| taccgtggcc ggaatcatga tcgcggtttt ccagccgttc atgcagttcg gttgttgctt | 120 |
| tgaacagcaa gaatatcccc ccgaacaaca taatcaggtc gcgtccggag aaggagaaat | 180 |
| ccatgacggt aaaatagcgg tttggtcagc gtgaccatcc atgaaatcag cgacagcagc | 240 |
| cccagacgca taatcagcgc cagtataaac ccagcaaac gcgctttatc gcgttgthtt | 300 |
| ggcggcagtt tgtcagcaag aatggcgatg aagaccaggt tatcgatacc cagcacaatt | 360 |
| tcgagaacaa caagcgtgag tagccccgcc caaattgagg ggtccattaa gaattcc | 417 |

<210> 32
 <211> 444
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 20

| | |
|--|-----|
| <400> 32 | |
| agttcagatg ttcggttttag gaattgccgg cgtctggctg tcgattttga tggacctgct | 60 |
| cttgcgagcg atttttctga cttggaggtt tattgtgcaa acacgaaaac tggctgaata | 120 |

```

ggctagtttt ttggtataat atcagtagaa tgataaaaag gagataatca gatgaaaacc 180
attcacacag ataaggcacc tgcagcaatt ggcccatacg ttcaaggga ggttggttga 240
aatttcctat ttgcctctgg tcaagttcct ttgtcacctg aaactggtga agtggttgg 300
gaaaccattc aggagcagac tgagcaagtc ttgaaaaata tcgcagcaat tttatcagaa 360
gcaggaacag actttgacca tgtggtgaag acgacttggt tcctaaaaga tatgaatgat 420
tttgtagcct ttaatgaagt ttat 444

```

```

<210> 33
<211> 480
<212> DNA
<213> Streptococcus suis

```

```

<220>
<223> ivs 23, 24

```

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<400> 33
tctgcactgt tgcgctgcct ataagttcta cgttcagtag tagatgaaat gttcagagga 60
agtggtatgg gttccaactt agtaaaatta gtcattgatg atttggcgaa cagaaattcc 120
aaagcctttc aaatcgcagt tgaagaagag aaattgggaa cctggaagtt ctacaagaaa 180
ttagttttga agaacaggac gggctagtct atttgcgaaa acgcaagagt tcagcaaatt 240
cttgcttttt ttgatataat ggtagaagca gttttaagag gtatcaggta tgaatattca 300
acaattacgc tacgttgtag ccattgcaaa cagtggtaga tttcgagagg cggctgagaa 360
aatgtatgtg tcccagccta gtttgtccat ttccattcgt gatttggaag aagagttagg 420
ttttcaaatt tttagccgaa ctagttcagg aacttttttg acacaaaaag ggatggaatt 480

```

```

<210> 34
<211> 418
<212> DNA
<213> Streptococcus suis

```

```

<220>
<223> ivs 25

```

```

<220>
<221> misc_feature
<222> (359)..(359)

```

<223> n is a, c, g, or t

<400> 34

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ggagatagca atgcttaata tttttgtatt agaagatgat ttttttcagc agagcagggt 60
agaaaatgct attaggcagt gtgttgaaga aacgtcagta aggtataaat tcctagaagt 120
tttttggtaaa ccaaataat tattggaatc aattgaggaa gcagggaatc atcaattttt 180
cttttttagat attgaaataa aaggagaaga aaagaaagga atggaaatcg ctaaagaaat 240
ccgggctcga gacacctatg ctgctattgt ctttgtaaca actcactcag aatttatgcc 300
agtaacatat cgttatcagg tttctgcttt agattttata gataaaggcc tggaggatng 360
tgactttcaa aaggcagtat cagatgtctt agtgcacgtt tttgaaaata ttgatcat 418
```

<210> 35

<211> 446

<212> DNA

<213> Streptococcus suis

<220>

<223> ivs 29

<400> 35

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ggcaagggtg ggtaaatttc taattggtga caaggcactt gaattctacc cagatagcaa 60
cgttgaacgc tatatccaga ttccttggtc agaaatgact agcattggcg caaacgttt 120
ctggcaaagc aatcagccgt cattttgaaa tttatacaga gaaaagtcga tttcttggtg 180
gcatctaaag attctggtaa gattcttaaa attgccctg agcatatcgg caatgaaaaa 240
gttgtgaaat taccgactct tatgcaaaca atcggcagaa aaatttcgaa tctatttgcc 300
aaaaaataaa aattcaagta taatagtaga aacggataag tagcatctgg ctcttccag 360
aaagtctgcg gtcgctgtga gcagatagga aaaagttgtg aaattctacc gttatgaaat 420
tatcaaaata caatcaagtg cacaga 446
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<210> 36

<211> 416

<212> DNA

<213> Streptococcus suis

<220>

<223> ivs 3

<400> 36
 ggattatcta ctataagcag tattcagaag ggcatgagga caagaaatcc tacaagattc 60
 tacaagaagt aggcattgagc cagaaggctg tcaagaaaac aattaactcc caaacactta 120
 cggctcttctt tatgcctttg gtcattggcga ccctacactt tgtcatcgcc cttatcatgc 180
 tcaagcaaatt gctactaagt tttgggtgta cctcatcact aatgattttac acagtcagtg 240
 gcatcacccct actggcagtc actctgattt actttgtcat ttacaagtgg actagtcgca 300
 cttattatcg cattattgaa cggtagcaga agtctcgcc tgtgcgagat ttcttgcttt 360
 ttcagggaaa tgggtgttaca atggtaatac caaaggaata ctgaagagg tgagaa 416

<210> 37
 <211> 263
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 31

<220>
 <221> misc_feature
 <222> (104)..(104)
 <223> n is a, c, g, or t

<400> 37
 acgaaaatdg atggatccat gcataaactg catcccttaa cttgtttttc gtgtgcctat 60
 tttttgtgaa tcgaattcga gtcgcccct cctgaccacc tatntgcac aagtgccaaa 120
 tgaccagtcg agtgtgcggt tagacaacta ctatacgggc aaggaactgg agattgagtt 180
 ggatgtggct ttgactccta gccaaaatgc ccagcgggtac ttcaagaagt accagaaact 240
 caaggaggcg gtcaagcacc tga 263

<210> 38
 <211> 403
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 32, 35

<400> 38

atatttgctc tcctgctctt taggggacaa tggaaaaagt agtctgtatc caacatttta 60
 caaagtagga ttttttctat aaaatagatt gtatatgaca ttcaaatacca ttctcaaaca 120
 actcaaacta tttgattata tcttaatcgg attcacccta gttttatcct ttcttcacgc 180
 aatttttacc tacacacaac tgacaacaga tgcaaatgag gcaaaaacaa ttgcctatgt 240
 ccgcatcaat ggtgaggtgg tgcaccaatt tgaattatca aaggacacac cccgtcaaga 300
 aaagacctac tatcccaatg aagggaata caatatcatt gaagttgatg gcgaacgcat 360
 tcgtgtcaag gaagacaata gccagacca aatcgccgtt atg 403

<210> 39
 <211> 401
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 33

<400> 39
 actcagttga acggagtagg atttataggt aaattgcctc caaatatcgt aagacaatcc 60
 tctattgaaa aataggggat tgtttggtta gaaataatgg tggagattct gtaaaaagcg 120
 aaagtgggtg gaaagttagg gtttagccga gaaaaagaga cttttctatc tatctttcac 180
 aattttctgt caatttgtgg tagaatagaa aaaatagatt ttttatgagg gataccatga 240
 cattagtata tcaatcaaca cgcgatgcta aaaatactgt atcggctagt caagcgattt 300
 tgcagggctt ggcgaccgac ggtgggttgt ttacaccgct ttctattcca acagttgact 360
 tggatttttc tgttttgaaa gatgcttctt atcaagacgt t 401

<210> 40
 <211> 404
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 34

<400> 40
 gtttatcggt cgctggagga aaagggttat aatccgatta accaaatcat tggctatgta 60
 ttaagtgggg accctgctta tattcctcgc tataatgatg cccgcaatca gattcgtaag 120

| | |
|---|-----|
| catgaacgag atgaaatcat tgaagaattg gtgcgctact atttgaaagg gaatgggatt | 180 |
| gacctctaataat gagaataatg ggattagacg tcgggttccaa gacagttggt gtagccattt | 240 |
| cagatccggtt aggttttcacg gcccaagggt tggaaatcat cccaatcgat gaagaaaagg | 300 |
| gcgaattcgg tctggagcgt ttgaccgaac ttgtagaaca gtacaagggt gataaatttg | 360 |
| ttgtaggctt gccgaagaat atgaataata ctagtggtcc acgt | 404 |

<210> 41
 <211> 384
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 36

| | |
|---|-----|
| <400> 41 | |
| ggtataatta tctgataaaa aactttggag acgacagtga gtttagaaaa ttacatgccg | 60 |
| gattttgcct tggaaaaggc ttatgacgtg accgtcgaaa gcttgaaaaa acatggcata | 120 |
| aaagtagtgt ttgttgactt ggataatacc ttgattgctt ggaataatcc cgatggtacg | 180 |
| ccagagatgc gccagtgggtt acatgatttg caggacgcag gtattcctgt tgtgggtggtg | 240 |
| tctaacaata aatacgaacg tgtcaaacgg gcggttgaaa aatttgggat tgaatttgaa | 300 |
| gccttcgctc tcaagccttt cacctttggg attaacctg ctttgaaacg ctttgatgctc | 360 |
| cagccgtatg aggtaattat gatt | 384 |

<210> 42
 <211> 413
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 5, 10, 12, 22

| | |
|---|-----|
| <400> 42 | |
| acgcacttgc tcgcgtagtc gatgaattag atgtaccgt tatggctttc ggtcttaaaa | 60 |
| atgatttccg aaatgaacta tttgaagggt cccaacattt gctcttattg gctgataaat | 120 |
| tagatgaaat caaaacaatc tgccaatatt gttctaaaaa agcgacaatg gttttgagaa | 180 |

| | |
|---|-----|
| cacaggatgg aaaacctact tatgaaggag aacaaatcca aattggtggc aatgaaacct | 240 |
| acattcctgt ctgtcgcaaa cattatTTTT caccagaaat taaagattta ccctaatttt | 300 |
| tgaaaatgaa atgagaagca actgtaaact gagcaactat atagaactga atttgcctat | 360 |
| gactctgtgc caattttcat aacttacata ctacggcaaa ggaattgaac acg | 413 |

<210> 43
 <211> 428
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 6, 7, 13, 14

| | |
|--|-----|
| <400> 43 | |
| gaagggatta aacaatccta tgctattcag gctgttcgtg aaattcggat tatcgttcat | 60 |
| cctaacaagg tcaactgatga tcagattacc atcttggccc atgatgttcg tgagaaaatt | 120 |
| gaaaataatc tggattatcc aggaaatatc aaaatcacag ttatccgtga aacaagagca | 180 |
| acagatgttg ctaagtaa at gtagaagagt ccgaagggct ctttttctac tggctcaaag | 240 |
| ttcgttttgg gttgggaata gaaaatagaa aatattttta tcgtatttaa aagcagttga | 300 |
| aattcatgct aaattttgtt aacttagaat gaaagattta aaaggagata tcatgaaaga | 360 |
| gcgaggctta ctcatgtct tttctggctc atctggtgcc ggaaaaggaa cagttcgaaa | 420 |
| ggaaattt | 428 |

<210> 44
 <211> 383
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 8

| | |
|---|-----|
| <400> 44 | |
| cttcaaagga cccagggacc tttgaattct caaatacgca tcatgttgac agttgccaca | 60 |
| cctacaccaa aatcaaatgc caacaagcgt tgagtcgggt aatagcgtaa gtagcgcaag | 120 |
| gtcatgataa gctgctcttc catacttaga cggcgtgggc gtctctcttt tcggtgttgc | 180 |
| tcttgataag cgtcagtgag acaatcaagc atcagatgaa acgtcgcttt ttacaccta | 240 |

tcaacaattt gaaattctct gagtttaatt ttaagacttt ttcgatatgt gtttccatac 300
 ctttagtata ccgcctttga gttaccgaac aagtctattg cttaaacttga tgaagggttg 360
 attgtctgtt ataattattgg ata 383

<210> 45
 <211> 415
 <212> DNA
 <213> Streptococcus suis

<220>
 <223> ivs 9, 17

<400> 45
 gcctatgaga ctcatTTTTcc ctgtctcaac tgctctaagc aattgttaca ggttggttgt 60
 aagcgggttg tctatatcaa tgaataccgc atggatgact atgctcagta cttgtataaa 120
 gaaaagggtc gtgagtttgt tcatttgccct ctagaggtgg ttaaacaggc atttgcagat 180
 gccgaattta tctaattgatt ttgtagaaga gtggttgcat agaacaacc tctttatctt 240
 taagaaaatg ctaggatagt cggatcaatct atgctatact agaaacgtta ttaagtcccg 300
 aaaaggtagt ttatagacta gttaatatTTT gcagaaacac ttgaaacaca attaaagaaa 360
 ctggtaatat tgaatagtaa gcgtaaaaac ttactacac ttcagtcact atttt 415

<210> 46
 <211> 45
 <212> DNA
 <213> artificial sequence

<220>
 <223> PCR primer corresponding to positions 250 to 273 of the fbps gene

<400> 46
 gcggatccga tgacgatgac aaatcttttg acggattttt ttac 45

<210> 47
 <211> 32
 <212> DNA
 <213> artificial sequence

<220>
 <223> PCR primer corresponding to positions 1911 to 1892 of the fbps

gene

<400> 47

cccaagcttg ggcatagaact agattttcat gg

32